

**NH RSA 235:23-a** established a Highway and Bridge Betterment Program. The program is funded by \$0.03 per gallon of the road toll collected under **NH RSA 260:32**. 88% of the program funds are distributed to each of the six state Highway Maintenance Districts based on the proportion of the mileage of the state-maintained class I, class II and class III highways and based on the proportion of the number of state-maintained bridges on these state highways. The remaining 12% of the funds are distributed to each city, town and unincorporated place as explained in **NH RSA 235:23- I**. The Betterment Program runs by state fiscal year. The 2014 Betterment program was from July 1, 2013 to June 30, 2014

The major purpose of the Betterment Program is to provide funds to insure adequate maintenance and improvement of the state highway system not supported with Federal Aid. Betterment funds are used to support; highway construction, reconstruction, resurfacing, highway maintenance, bridge construction, bridge reconstruction and bridge maintenance projects. The Department breaks up the Betterment Program into categories to allow the Department to target specific areas such as resurfacing, reconstruction of secondary routes and other areas. In FY 2014 NHDOT targeted Betterment funds to the categories as shown in Figure 1.

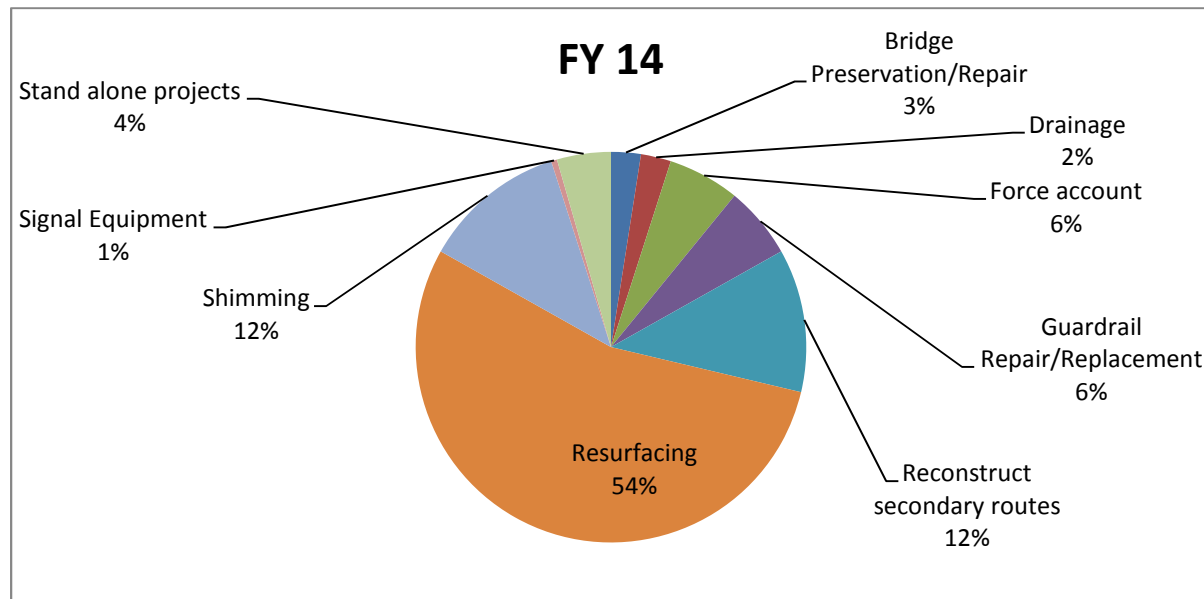


Figure 1. FY 2014 Betterment Categories

The Department continues to fine tune the allocations and categories shown above. An example is for current state fiscal year 2015 the Department has reallocated the guardrail funds to Reconstruction of Secondary Routes.

Table 1. below shows the actual targeted funding for each Betterment category for State FY 2014, and the proposed targeted funding for each Betterment category for 2015, 2016 and 2017. The final funding amounts receive minor adjustments depending on actual funds collected, project scopes, estimates and needs.

Categories	FY 2014	FY 2015	FY 2016	FY 2017
Bridge	\$500,000	\$750,000	\$750,000	\$750,000
Drainage	\$500,000	\$500,000	\$500,000	\$500,000
Force Account	\$1,200,000	\$ 1,200,000	\$1,200,000	\$1,200,000
Guardrail	\$1,200,000	\$0	\$0	\$0
Intersections	\$0	\$0	\$0	\$0
Reconstruct Secondary Roads	\$2,400,000	\$3,600,000	\$3,600,000	\$0
Resurfacing	\$11,000,000	\$11,000,000	\$16,813,529	\$28,000,000
Pavement Levelling	\$2,400,000	\$2,400,000	\$2,400,000	\$3,000,000
Signals	\$100,000	\$100,000	\$100,000	\$100,000
Stand Alone	\$900,000	\$900,000	\$900,000	\$5,646,376
<b>Total</b>	<b>\$20,200,000</b>	<b>\$20,450,000</b>	<b>\$26,263,529*</b>	<b>\$39,196,376**</b>

Table 1. Betterment Program Category Appropriations State FY 2014 to FY2017

\* The FY 2016 Betterment Program anticipates spending and additional \$4,000,000 Betterment funds that have been generated from reimbursements to the Betterment account for past emergency projects and for closing out old projects and \$1,263,529 designated to come from SB 367.

\*\* The FY 2017 Betterment Program anticipates spending an additional \$4,000,000 Betterment funds carried over from project closures and \$14,196,376 designated to come from SB 367.



The **Bridge** Category is used to provide materials and equipment for NHDOT Bridge Maintenance forces to reconstruct and repair NH's non-federal aid eligible bridges. Funding from these projects allow our forces to repair, reconstruct and replace: bridge decks, bridge abutments, end dams, expansion joints, wing walls, bridge rails, bridge footings, bridge steel, bridge shoes, bridge membranes, pipe inverts, and many other things. Repair or minor reconstruction at the right time can extend the life of a bridge and greatly reduce the overall cost of the structure. This work also allows some bridges to continue carrying legal loads and avoids weight restrictions or worse, closing the bridge altogether. Seventeen projects were completed during FY 14 including 6 red listed bridges.

The **Drainage** Category provides funds for contracts and allows NHDOT forces to purchase materials and rent equipment to reconstruct, repair, slipline, or replace larger failing pipes, culverts and their appurtenances. These funds allow our people to repair storm damaged pipes and headwalls damaged by storms or other causes that are not eligible for FEMA reimbursement. The Department is facing a challenge with a large number of corrugated steel pipes that were installed over the last 60 years that continue to rust away.





The **Force Account** Category provides funds to allow NHDOT forces the ability to prepare and advertise contracts, rent equipment and purchase materials for the unforeseen events that happen along our roadways and roadsides that need immediate attention. The six NHDOT Highway Maintenance Districts have discretion over the use of these funds and use them when things break or fail. These funds also allow the Districts to replace failing drainage ahead of the resurfacing projects.

The Department has in excess of \$120 million worth of **Guardrail** along our roadsides. Some of this guardrail has failed or become obsolete. The Betterment Program funded a Guardrail category for several years allowing each of the 6 highway maintenance Districts to bid a project for a guardrail Contractor to replace dilapidated, rail that does not meet current standards. During fiscal year 2014 the Districts replaced about 45,000 linear feet of guardrail. Future guardrail replacement will be funded through the Federal Highway Safety Improvement Program.







The Betterment program has historically included a category to reconstruct **Intersections** that function poorly or need to be upgraded. In FY 2013 this included replacing a signalized intersection in Hollis and improving signalized intersections in Lebanon. The Department is currently leveraging the Federal *“Highway Safety Improvement Program”* (HSIP) to reconstruct intersections with a documented crash history. This Federal program may be applied to Federal and non-Federal Aid roadways. The Betterment funds from this category have been removed from the program for FY 2014 to help compensate for reduced revenue in the Betterment Program due to reduced travel and more fuel efficient vehicles.

## The **Reconstruct Secondary Roads**

Betterment category funds projects where the Department reconstructs a section of poor roadway. Typical treatments include installing new and replacing old drainage, digging deeper ditches, removing any rocks near the roadway surface, reclaiming (the process of grinding the pavement and top layer of gravel), sandwiching (placing a layer of good gravel over the existing roadway and then paving over the gravel layer) or Full box reconstruction (digging out substandard material and replacing with good clean gravel). This work is efficient as it is designed in the field and accomplished with state forces, rented equipment, locally purchased gravels and low bid Contractors. During FY 2014 approximately 22 lane miles of roadways were reconstructed.





The **Resurfacing** category makes up more than ½ of the Betterment program. In FY 2014 the Department paved 145 miles using Betterment funds. The Department recognizes pavement preservation strategies as the most efficient way to keep good roadways good. Preservation strategies require regular thin lift overlays including chip seals, micro surfacing and thin lift pavements to keep good roads sealed and to prevent water, salt and other things from deteriorating the pavement and the gravels below. We do as much preservation as we can but the bulk of the resurfacing goes to poor roads and serves to provide surface maintenance that provides a better ride for a year or two but then deteriorates as the existing cracks reflect through. This surface maintenance strategy is necessary to keep the roads passable and to allow us to plow the roads in the wintertime.

**Pavement Levelling** is another surface maintenance paving treatment. The Department typically purchases the hot mix asphalt from an approved supplier and places the mix with our own forces and a grader. This treatment is often very thin and is used to fill the ruts in the road, put some crown back into the road and or hold a breaking up section of road together. The Districts have discretion over where this work takes place as often the roadway conditions change even in April, May and June and pavement levelling is used to keep the roads passable and provide a surface that is drivable. The Districts provided about 227 miles of pavement levelling in FY 2014.







The Department maintains approximately 435 traffic signals on the state system. The **Signals** category provides funding to upgrade existing traffic signal systems. The Department has converted span wire signal systems to mast arm systems and upgraded traffic signal hardware. The 2014 Betterment funds contributed to a \$100,000 project that replaced all signal heads, mounting brackets and wiring, and replaced existing loop detection with Video detection at a state maintained signal in Manchester on South willow Street. This project also installed GPS time synchronization for the signal coordination, a communication link to the master controller and modem communication for the City of Manchester to remotely monitor the performance of this corridor.

The **Stand Alone** Betterment funding category is reserved for unforeseen emergencies that will not be refunded by FEMA or Federal highway Administration Emergency relief funds. Slope failures are one such common unforeseen emergency that occur on state maintained roads that run along the state's river banks. These failures are often discovered during routine roadway maintenance and fixed before they are seen from the road. Occasionally a larger failure will take some of the road requiring a closure and detour.



Betterment funding allocations are made to each of the six highway maintenance districts for each Betterment Category. These allocations are based on the amount of projected revenues to come into the Department's Betterment account and are used to plan the projects within a district. Unused or unspent allocations carry forward from year to year within the Betterment Program. As projects are completed within the fiscal year planned and final expenditures are determined, the balance of funds are reallocated to other existing or new projects. Figure 2 shows the actual FY 2013 expenditures per highway maintenance district.

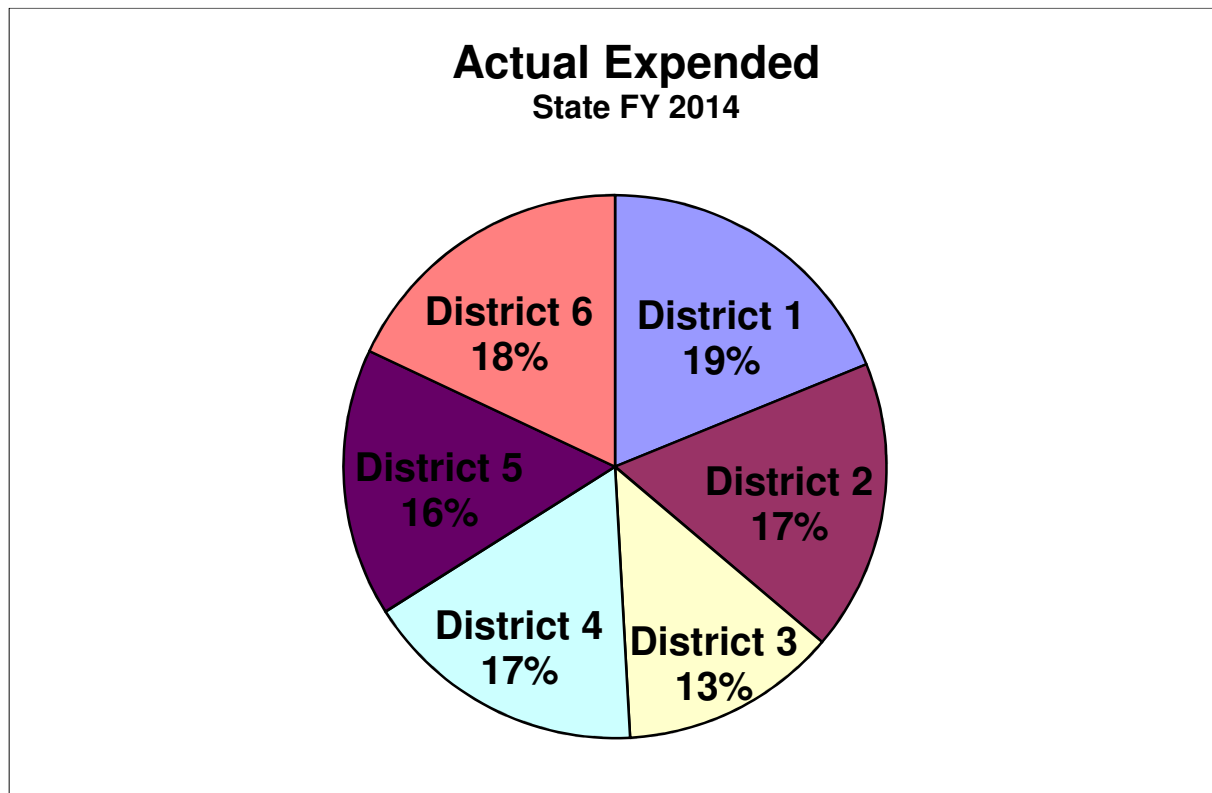


Figure 2. FY 2014 Betterment Funds spent per District

Figure 3 shows the value of projects programmed for each District compared to the actual amount expended. The amount expended is higher because it includes expenses on projects from past fiscal years.

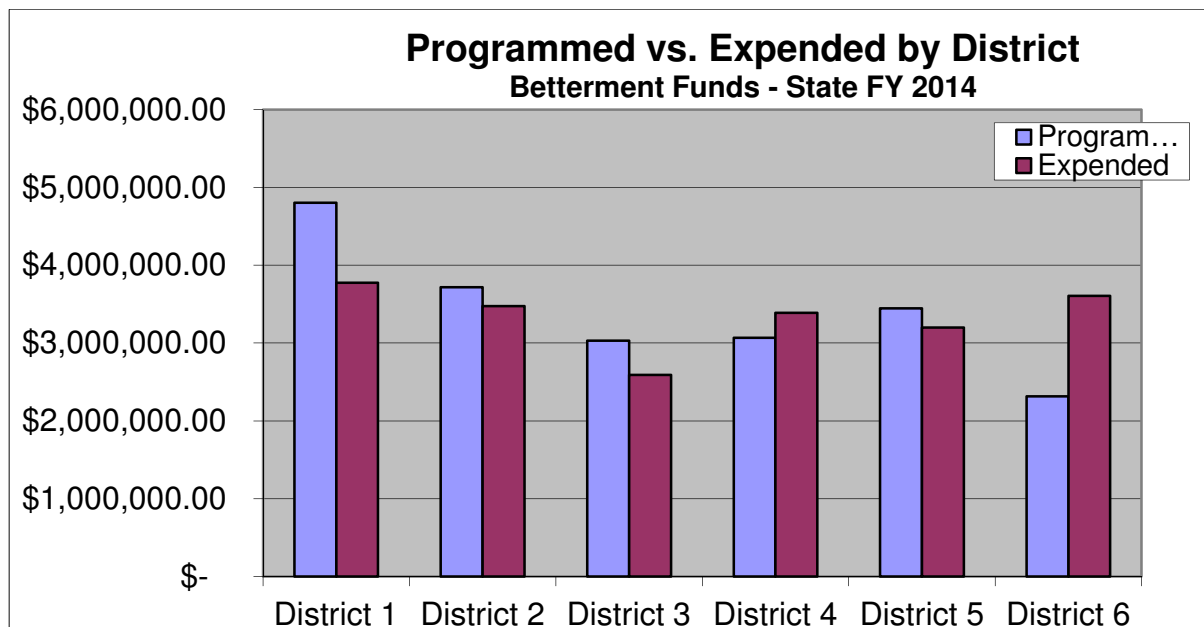


Figure 3. Programmed Projects vs. Expenditures



The following information on the Betterment Program is attached to support this report:

- The Highway and Bridge betterment Program lists the projects created and funded from FY 2014 Betterment funds.
- NH RSA Section 235:23-a Highway and Bridge Betterment Program